F=ma make up lab - simulation

1. Go to the following link: <http://phet.colorado.edu/en/simulation/forces-and-motion>
2. What you will be doing is taking data for 2 separate scenarios, and then creating graphs, relationships and equations for each of the two scenarios.

(SEE THE BACK OF THIS WORKSHEET FOR A SCREEN SHOT TO HELP YOU LOCATE THINGS WITHIN THE SIMULATION IF YOU ARE HAVING DIFFICULTY)

Scenario 1

Once you have gone to the website, run the simulation. At the top of the simulation there are tabs, click on the **force graphs** tab.

In this scenario, you will be choosing a constant mass by choosing an object from the lower right part of the screen (see screen shot if necessary). Record this mass.

You will be doing this activity with NO friction, so you must choose the ice surface, which simulates no friction.

You will take 8 different points by changing the applied force 8 different times, and each time you change the applied force (Hit play at the bottom of the screen), you will record the acceleration. To view the acceleration, you must select the acceleration graph. Your data table will look like this:

F(N) a(m/s/s)

You will then graph the acceleration (y axis) vs the force(N), find the relationship and write the equation.

Scenario 2

In this scenario, you will be choosing a constant force, by using the same applied force everytime you run the trial. Record this constant.

You will be doing this activity with NO friction, so you must choose the ice surface, which simulates no friction.

You will take 5 different points by changing the object (and therefore the mass) 5 different times, and each time you change the mass (Using the constant force, hit play at the bottom of the screen), you will record the acceleration. To view the acceleration, you must select the acceleration graph. Your data table will look like this:

mass(kg) a(m/s/s)

You will then graph the acceleration (y axis) vs the mass(kg), find the relationship and write the equation.

IF YOU HAVE DIFFICULTY, DON’T GIVE UP. PLAY AROUND WITH THE SIMULATION TO FIGURE OUT WHAT IS NECESSARY TO TAKE THE DATA.

